

REMARKS

Claims 27-29 and 31-39 are pending in this application. By this Amendment, claims 27-29, 31, 34, 36 and 37 are amended and claim 30 is canceled. Support for the amendment to claim 27 can be found at least at paragraphs [0002] and [0047] of the specification. No new matter is added.

The courtesies extended to Applicant's representative by Examiners Kwon and Ryan at the interview held June 21, 2010, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicant's record of the interview.

The Office Action objects to claim 27 for informalities. By this Amendment, claim 27 is amended responsive to the objection. MEA is defined in claim 27. Withdrawal of the objection is respectfully requested.

The Office Action rejects claims 27-39 under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the enablement requirement. Applicant respectfully traverses this rejection.

The Office Action asserts that the specification fails to provide any examples of materials or methods for making an adhesive with a Young's modulus within the range of 30-50 MPa. One skilled in the art could obtain an adhesive having the claimed Young's modulus range without undue experimentation. The claims are directed to a novel fuel cell stack with an adhesive having the claimed Young's modulus, not a method of making such an adhesive or the adhesive itself.

Adhesives having such a Young's modulus are known in the art, and references having such adhesives have in fact been disclosed to the Examiner in several Information Disclosure Statements. For example, JP-A-7-249417 (forwarded to the Examiner in the June 12, 2006 IDS) discloses at paragraph [0034] "silicone RTV rubber or urethane RTV rubber (such as

MOS 7 by Konishi Co., Ltd that has composition of epoxy resin and modified silicone, and liquid form gasket 1211 by ThreeBond Co., Ltd.). JP-A-11-154522 (forwarded to the Examiner in the October 30, 2009 IDS), discloses in paragraph [0048] "adhesives having various elastic modulus can be achieved by adjusting the composition of epoxy resin and modified silicone, and by enlarging the ratio [of] modified silicone/epoxy resin, the elastic modulus becomes smaller." Thus, adhesives with a Young's modulus within the claimed range of 30-50 MPa are known in the art. Accordingly, the specification enables such an adhesive. Withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 27-30 and 35-38 under 35 U.S.C. §103(a) over Schmid et al. (U.S. Patent No. 6,080,503) in view of Araldite "Araldite 2018 Technical Data Sheet"; and rejects claims 27 and 32-34 under 35 U.S.C. §103(a) over Schmid "as evidenced by" Araldite. The rejections are respectfully traversed.

The Office Action acknowledges that none of the applied references discloses the claimed combination of features including an adhesive at the claimed location and having a Young's modulus within the claimed range of 30 MPa to 50 MPa, but notes that the Young's modulus of Araldite is 16 MPa. Although the minimum claimed Young's modulus is almost twice that of Araldite, the Office Action asserts that the two elastic moduli "are not significantly different from each other."

As agreed during the personal interview, the claimed range of Young's modulus and the Young's modulus of Araldite are in fact patentably distinct from one another. The Office Action applies *Titanium Metals Corp. v. Banner*, 778 F.2d 775 (Fed. Cir. 1985), in which claims to a titanium alloy with 0.8% nickel and 0.3% molybdenum were held to be obvious over a prior art reference which disclosed an alloy containing 0.75% nickel and 0.25% molybdenum. (See also MPEP §2131.03 (III)). However, in *Titanium Metals*, the prior art alloy was considered to be close enough to the claimed alloy so as to support a §103

obviousness rejection because "one skilled in the art would have expected them to have the same properties." In the present case, one skilled in the art would have known that the minimum Young's modulus recited in independent claim 27 and the disclosed Young's modulus do not have the same properties. Rather, the minimum Young's modulus in the claimed range would be nearly twice as stiff as the Young's modulus disclosed in the prior art. Thus, the facts of *Titanium Metals* and the present Application's facts are inapposite, and a Young's modulus of 16 MPa and 30 MPa are significantly different from each other.

As discussed above, adhesives having the claimed range of Young's modulus are known in the art, but the combination of such adhesives with the fuel cell structure of the present claims is novel and nonobvious over the prior art. The Office Action provides no motivation or reasoning why it would have been obvious to one of ordinary skill to use an adhesive with a Young's modulus between 30 MPa and 50 MPa with the fuel cell stack structure at the location recited in independent claim 27. Indeed, the Office Action argues that one of ordinary skill would have been motivated to combine the fuel cell stack structure with an adhesive having a Young's modulus of 16 MPa (Araldite), which is only about half as stiff as the lowest point of the claimed range (30 MPa). One of ordinary skill thus would not have been motivated to modify the applied references to result in the fuel cell stack structure of claim 27 including an adhesive having a Young's modulus between 30 MPa and 50 MPa.

Although the various claimed elements may have been known individually, it is well settled that a combination of known components may be patentable. *See, e.g., In re Wright*, 848 F.2d 1216 (Fed Cir. 1988), holding a combination of known mechanical elements to be nonobvious over the prior art, which disclosed the individual elements in isolation but not the combination of the elements. Indeed, all inventions involve a combination of known elements. As the late Chief Judge Markey (the first Chief Judge of the Federal Circuit) once famously quoted "virtually all inventions are 'combinations,' and ... every invention is formed

of 'old elements' Only God works from nothing, Man must work with old elements." (H.T. Markey, Why Not the Statute?, 65 J.Pat.Off.Soc'y 331, 333-34 (1983)). Applicant respectfully submits that the claimed combination of features is novel and nonobvious. Such a combination is not disclosed by the prior art and would not have been obvious over the prior art. Withdrawal of the rejections is respectfully requested.

The Office Action rejects claim 31 under 35 U.S.C. §103(a) over Schmid "as evidenced by" Araldite in view of Uchida et al. (U.S. Patent No. 6,316,139); and rejects claim 39 under 35 U.S.C. §103(a) over Schmid "as evidenced by" Araldite in view of Mizuno (U.S. Patent Application Publication No. 2001/0049047). The rejections are respectfully traversed.

Claims 31 and 39 depend from independent claim 27, and are patentable for at least their dependency on independent claim 27, as well as for the additional features they recite. Withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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